

## **REMARKS**

Claims 1-4 are now pending in the application. Applicant cancels claims 5-7 without disclaimer or prejudice to the subject matter contained therein. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

## **CLAIM OBJECTIONS**

Claims 5-7 stand objected to under 37 CFR 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants cancelled claims 5-7. As such, this objection is rendered moot.

## **REJECTION UNDER 35 U.S.C. § 103**

Claims 1-3, 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Larue (U.S. Pat. No. 5,705,399) in view of Horowitz et al. (1980) or Hirono et al. (U.S. Pat. No. 6,756,793). Claims 4 and 7 stand rejected under U.S.C. § 103(a) as being unpatentable over Larue in view of Horowitz et al. or Hirono et al. as applied to claim 1 above, and further in view of Duncan (U.S. Pat. No. 6,041,642) or Roukes et al. (6,722,200). These rejections are respectfully traversed.

Applicant respectfully submits that **the proposed combination is improper**. Applicant's specification states that "[i]n the conventional measuring apparatus of the above-described structure, the oscillation frequency of the piezoelectric vibrating reed is measured with a frequency counter." (Paragraph [0006]; Emphasis added). In other words, conventionally, oscillation frequency is measured with a frequency counter.

Applicant's invention is directed to measuring oscillation frequency with a phase lock loop circuit. In particular, claim 1 recites "determining the oscillation frequency of the piezoelectric vibrating reed based on an output of a loop filter of a phase lock loop circuit."

In contrast, Larue is directed to measuring oscillation frequency with a frequency counter. For example, Larue discloses providing a signal  $f_2$  that represents a resonant frequency of a detector. The signal  $f_2$  is compared to a signal  $f_1$  and provides a difference output signal  $\Delta f$  that "is processed by conventional means using a frequency counter or meter." (Column 13, Lines 1-7; Emphasis added). In other words, Larue is directed to using a frequency counter according to conventional means and is absent of any teaching or suggestion of using a phase lock loop circuit to measure oscillation frequency. The Examiner relies on an improper combination with Horowitz or Hirono to disclose the phase lock loop circuit.

Applicant respectfully asserts that the Examiner has failed to clearly and particularly support his alleged motivation to combine these references using actual evidence as required. The motivation cannot be based on Applicant's disclosure. Larue is absent of any teaching or suggestion of using a phase lock loop circuit to measure oscillation frequency. Instead, Larue specifically recites using a frequency counter as noted above.

According to established mandates of the patent laws, "[t]o establish a prima facie case of obviousness . . . there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." M.P.E.P. §

**2142.** “There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art.” **M.P.E.P. § 2143.01.**

“The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, in some cases the nature of the problem to be solved.” *In re Kotzab*, 217 F.3d 1365, 1370, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000). The showing must be “clear and particular, and it must be supported by **actual evidence.**” *Teleflex, Inc. v. Ficosa North American Corp.*, 299 F.3d 1313, 1334, 63 U.S.P.Q.2d 1374, 1387 (Fed. Cir. 2002) (quoting *In re Dembicza*k, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999)) (emphasis added). It is not sufficient to rely on “common sense and common knowledge,” as there must be specific evidence to support the motivation. *In re Lee*, 277 F.3d. 1338, 1344-45, 61 U.S.P.Q.2d 1430, 1434-35 (Fed. Cir. 2002)]. It is respectfully submitted that the Examiner has not made a legally sufficient showing of a motivation to combine based on actual, specific, evidence.

Rather, according to M.P.E.P. § 2142, “[t]o reach a proper determination under 35 U.S.C. 103, . . . impermissible hindsight must be avoided and the legal conclusion [of obviousness] must be reached on the basis of the facts gleaned from the prior art.” Furthermore, according to M.P.E.P. § 2143.01, “[t]he mere fact that references can be . . . modified does not render the resultant combination obvious unless the prior art also suggests the desirability of [such modification].” *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990).

Since the Patent Office has offered no proper support or motivation for combining the references, it is respectfully submitted that the rejection based on obviousness is clearly and unequivocally founded upon "knowledge gleaned only from applicant's disclosure." M.P.E.P. § 2145. Consequently, it is respectfully submitted that the rejection entails hindsight and is, therefore, improper.

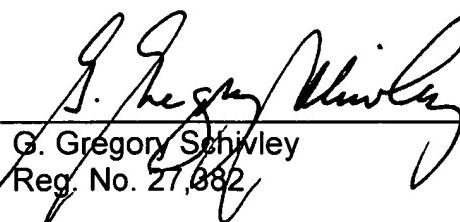
**CONCLUSION**

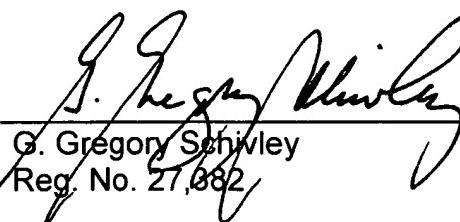
It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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